United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

UNITED STATES
COURT OF APPEALS FOR THE
DISTRICT OF COLUMBIA

FILED FEB 17 1940

Joseph W. Stewart

CLERK

IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA

April Term, 1939.

534

No. 7506.

Hemphill Company, A Corporation of the State of Massachusetts, *Appellant*,

v.

Conway P. Coe, Commissioner of Patents, *Appellee*.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA.

BRIEF FOR PLAINTIFF, APPELLANT.

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CONWAY P. COE, Commissioner of Patents, *Appellee*.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA.

BRIEF FOR PLAINTIFF, APPELLANT.

This is an appeal from the judgment of the United States District Court for the District of Columbia dismissing appellant's bill of complaint to authorize the Commissioner of Patents to issue a patent upon the application of Frank E. Jones, Serial No. 92,746, of which application appellant is the owner (R. 3, 9). Appellee is the Commissioner of Patents of the United States.

[1] Herein, the appellant, Hemphill Company, will be referred to as plaintiff, and appellee, Conway P. Coe, Commissioner of Patents, will be referred to as defendant.

JURISDICTIONAL STATEMENT.

Jurisdiction of the lower Court, as set forth in the Complaint, is conferred by Section 4915, R. S., (U. S. C., Title 35, Section 63), the present suit having been filed in the District Court August 2, 1937, within six months after February 8, 1937, the date on which the Board of Appeals of the Patent Office refused a patent to plaintiff as assignee, and no appeal having been taken to the United States Court of Customs and Patent Appeals.

The venue as alleged in the Complaint, is based upon the fact that defendant has his official residence in the District of Columbia.

The answer to the Complaint does not challenge either the jurisdiction of the lower Court or the venue.

The jurisdiction of this court in this case, to review the judgment of the court below, is predicated upon R. S. 128 (U. S. C., Title 28, Section 235).

The pleadings necessary to show the existence of the jurisdictions above pointed out are the Complaint (R. 1); the Answer (R. 9); the Order dismissing the Complaint (R. 168); the Notice of Appeal filed within the statutory period (R. 169); and the Bond on Appeal (R. 169).

STATEMENT OF THE CASE.

Frank E. Jones, assignor to the Hemphill Company, plaintiff herein, filed an application for patent in the United States Patent Office March 6, 1926, and after due proceedings had thereon, the Primary Examiner finally rejected, among others, claims 38, 78, 86, 89, 100, 101, 105, 116, constituting the issue herein, and on appeal to the Board of Appeals, the decision of the Primary Examiner was affirmed February 8, 1937, in rejecting said claims as not patentable over the patents to Hirner No. 1,026,206; Lomax No. 1,236,189; and Bosworth No. 1,432,172, (R. 1 and 9).

Thereafter, and within the statutory period of six months, to wit, August 2, 1937, plaintiff filed its Bill of

Complaint in the District Court, (R. 1) and on June 29, 1939, after the submission of testimony and other proceedings, the Bill of Complaint was dismissed, (R. 168), whereupon plaintiff on July 19, 1939, gave its notice of appeal and filed a bond on appeal, (R. 169).

STATUTES INVOLVED.

The statutes involved are:

U. S. C., Title 35, Section 31, setting forth what is patentable.

U. S. C., Title 35, Section 63, (Section 4915 R. S.), stating the jurisdiction of the District Court.

U. S. C., Title 28, Section 235, (R. S. 128), stating the jurisdiction of this court.

STATEMENT OF POINTS.

The points upon which appellant intends to rely on appeal are:

1. That the Court below erred in holding that it was not invention in view of the prior art cited, to substitute a jack having a multiplicity of butts for the plurality of jacks of the Lomax patent.

2. That the Court below erred in holding that it was not invention to modify the patterning procedure of the Lomax patent to produce effects in accordance with the procedure of the Hirner patent.

3. That the Court below erred in holding that plaintiff is not entitled to a patent on the Jones application in suit containing claims 38, 78, 86, 89, 100, 101, 105, and 116.

4. That the Court below erred in failing to hold that the patent references Lomax, Hirner and Bosworth, differ from one another so radically in construction and function that any combination thereof would not constitute a valid anticipation of the claims of the issue.

5. That the Court below erred in failing to hold that the combination set forth in the claims of the issue would result in marked increase in the pattern range or possibilities of plaintiff's machine, over that of the references, such as would amount to invention.

6. That the Court below erred in failing to hold that the combination set forth in the claims of the issue present marked advantages that are not inherent in the reference patents and are such as would amount to invention.

7. That the Court below erred in holding that the bill of complaint should be dismissed as to all claims of the Jones application set out in the Bill.

SUMMARY OF ARGUMENT.

1. Invention at issue.

2. Requirements necessary for combining dissimilar reference patents.

3. Discussion of Lomax patent No. 1,236,189.

4. Discussion of Hirner patent No. 1,026,206.

5. Discussion of Bosworth patent No. 1,433,172.

6. Dissimilarty of constructions and methods of operation of reference patents Hirner, Lomax and Bosworth.

7. Advantages of Jones construction over prior patented constructions, and in particular that of the Lomax patent No. 1,236,189.

8. Manner in which the claims of the issue distinguish patentably over the references of record.

ARGUMENT.

The foregoing subjects will now be considered in the order above enumerated.

INVENTION AT ISSUE.

The invention as disclosed in the Jones application serially numbered 92,746 is directed to a knitting machine of the type constructed and adapted to knit hosiery, especially men's half hose with fancy or pattern effects, as set forth in the following claims constituting the issue of this suit.

38. A circular, independent needle, knitting machine having a circular series of needles, means to feed two yarns thereto in a plating relation, jacks for all the needles located in the needle grooves of the needle cylinder, and having only lengthwise sliding movement therein, in parallelism with the axis of the needle cylinder, said jacks having spaced butts thereby rendering them selective, selective means acting upon said jacks and making selection because of said spaced butts, whereby their needles will take both plating yarns and will knit them in a plating relation and whereby the other needles will be elevated to a less extent and will therefore take only one of said plating yarns, and pattern means controlling said selective means, whereby figures each varying in width in different parts thereof may be made.

78. A circular knitting machine having a grooved needle cylinder, needles and jacks mounted in the grooves of the needle cylinder for movements lengthwise thereof, said jacks being provided with butts extending lengthwise of the jacks, number of butts on a jack depending upon the pattern to be knitted, a series of selective members each adapted to act upon all of the jacks that have appropriately positioned butts to be engaged by the several selective members, there being as many selective members as there are differently positioned butts on the jacks.

86. In a circular knitting machine having a needle cylinder and a series of needles therein, a series of instrumentalities each adapted to be associated individually with said needles to selectively cooperate therewith by means of se-

lective control thereon, said instrumentalities having selective control means including a plurality of removable butts extending from said instrumentalities in spaced relation to each other and along the axis of the machine, said butts being removable as desired to provide the desired selective cooperation, and cam means operable selectively along the axis of the machine upon the remaining butts selectively to operate the instrumentalities, said cam means being adapted to be selectively operated by pattern mechanism.

89. A circular knitting machine having a slotted needle cylinder and needles independently movable in the slots thereof, a jack for each needle mounted in the needle cylinder slot and movable lengthwise in the slot pertaining to the companion needle and independently thereof, said jacks each having a plurality of spaced butts, radially movable cams positioned so as respectively to engage the butts or said jacks to cause them to elevate the respective needles, means to introduce a yarn so that all the needles may be elevated to take the same or certain needles only may be elevated to take the same, whereby a stitch variation may be produced, and means for so controlling said selective cams as to produce a stitch-variation pattern effect in the fabric.

100. A circular knitting machine having a slotted needle cylinder and a series of independent needles, jacks, mounted in the cylinder slots and movable lengthwise thereof and independently of the needles, respectively controlling said needles and provided with spaced butts extending lengthwise of the needle cylinder and ranging from a predetermined minimum to a predetermined maximum, a series of selective movable cams spaced lengthwise of the needle cylinder to engage correspondingly positioned butts, each said cam adapted to operate upon certain jack butts, pattern means to move selective cams into functioning relation with jack butts.

101. A circular knitting machine having a slotted needle cylinder and a series of independent needles, jacks, mounted in the cylinder slots and movable lengthwise thereof, respectively controlling said needles and provided with spaced butts extending lengthwise of the needle cylinder and ranging from a predetermined minimum to a predetermined maximum, a series of selective movable cams spaced lengthwise of the needle cylinder to engage correspondingly positioned butts, each said cam adapted to operate upon certain jack butts, pattern means to move selective cams into functioning relation with jack butts, and means to render said pattern means ineffective during reciprocatory knitting.

105. In a circular knitting machine, a needle cylinder, a series of upright, independent knitting needles mounted for lengthwise movement in the grooves of said cylinder, a corresponding series of upright members individual to said needles respectively and also mounted for lengthwise movement in the said needle grooves below said needles and independently thereof, the selection or non-selection whereof determines whether or not the corresponding needle shall be elevated to receive a yarn, said members having butts in a plurality of planes lengthwise of the axis of the machine, and a series of members mounted in superposed face-to-face relation according to said plurality of planes operable selectively upon the butts according to said plurality of planes, said series of members being adapted to be selectively operated by pattern mechanism.

116. A knitting machine having independent needles and other knitting instrumentalities, means for selecting some of the instrumentalities to vary the character of the knitting, said means including a plurality of movable, selective cams in combination with a cam for moving some of the said instrumentalities from a position where they will not be acted upon by the selective cams to a position where such of the selective cams as are in operative position shall act

upon the moved instrumentalities to impart a further movement to them and thereby affect the knitting.

Whereas the invention at issue is directed to a hosiery knitting machine, the complications of the machine and the actual methods of knitting employed need not be detailed in order for this Court to obtain a proper understanding of the invention at issue as set forth in the claims now before the Court.

Briefly the invention at issue pertains to the independent selection of needles of a knitting machine which needles in their knitting movements have right-line movements, first in one direction to cause the hooks of the needles to engage the yarn, and then in the other direction to cause the needles to draw stitches through previously knitted stitches. The aforesaid right-line movements of the needles are, for normal knitting, effected by cams which are usual and form no necessary part of the present invention, that is, insofar as the instant inventor's contribution is concerned.

The needles in their right-line movements move to and from knitting position in slots of a needle cylinder which cylinder rotates past a yarn feeding station which is carried by a fixed so-called cam ring in which are mounted cams for effecting the necessary to and fro movements of the needles.

Elements cooperating with the needles, called jacks, are mounted in the slots of the needle cylinder and beneath the needles these jacks effecting a selective movement of the needles to yarn taking position. By "selective movement of the needles" is meant such a selective control of the needles that during one rotation of the needle cylinder past the yarn feeding point, some of the needles knit in a different manner from others, the selection being such that in a following rotation of the needle cylinder, or course of knitting, the selection may be changed to obtain varied pattern or design effects in the knitted stocking. The use of jacks is admittedly old, a good example being as illustrated in the Lomax patent which will later be discussed. However, while the use of jacks for the selective control of needles was admittedly old prior to the invention set forth in plaintiff's patent application Ser. No. 92,746, the said patent application was directed to the first development whereby a greatly increased pattern or design scope in a knitted fabric was possible.

RE COMBINATION OF REFERENCES.

As will be hereinafter pointed out more in detail, the three patents now relied upon as anticipating references, namely, Lomax, Hirner and Bosworth, differ from one another quite radically, both in construction and, insofar as Bosworth is concerned in comparison with the other references, also as to function or knitting methods employed.

The three reference patents are so dissimilar that, for the reasons hereinafter pointed out, a combination of any two of the reference patents to anticipate any of the claims of plaintiff's application now before this Court, would not constitute a valid anticipation.

In connection with the immediately preceding remarks, plaintiff is not attempting to urge that, broadly, reference patents cannot be combined merely because they disclose different structures, as that obviously would always be the case. But the differences in construction as set forth in the claims before this Court result in a marked increase in the pattern range or possibilities of plaintiff's machine as compared with the references. In other words, if it were possible, without exercising inventive ingenuity, to combine, say, the Lomax and Hirner patents, or the Lomax and Bosworth patent constructions, plaintiff could still point out marked advantages that are not inherent in the reference patents.

RE THE COMBINING OF DISSIMILAR REFERENCE PATENTS.

Attention is called to the decision in *Ex parte McCullum*, C. D. 1914, page 70, which was quoted, with approval, in the decision by the Court of Customs and Patent Appeals *in re Application of John H. Cordes*, 76 F. (2d) 302; and 25 U. S. P. Q., page 140. The Court *In re Cordes* quoted a portion of the McCullum decision reading as follows:

> "In determining the patentability of a claim over features found only in a plurality of references it is necessary to consider the structural differences specified in the claims as well as their functional differences or result. If the structures of the several references can not be combined without the exercise of invention, even though the result is old, the claims should be allowed. If the structures of the references may be combined or substituted one for the other and the combined function or result is new, the claim should be allowed. It is only when both the structural features found in the references may be combined without invention to meet the structure called for by the claim and the function or result involves no invention that the claim should be rejected."

Attention is particularly called to that portion of the McCullum decision reading:

> .... "If the structures of the several references can not be combined without the exercise of invention, even though the result is old, the claims should be allowed. If the structures of the references may be combined or substituted one for the other and the combined function or result is new, the claim should be allowed."

When discussing the pertinency of the reference patents, it will be evident that the requirements of the McCullum decision for a valid combination of references is not present in the reference patents to Lomax, Hirner and Bosworth when attempted to be applied as anticipations of the claims before the Court.

In the *In re Cordes* decision the claims on appeal were refused but for the reason that the reference patent disclosures were such as to teach one skilled in the art the alleged combination claimed by Cordes.

In *In re Farrand,* 18 C. C. P. A. 1452, 49 F. (2d) 1035, (cited in *In re Cordes,* the Court also refused claims on appeal, apparently because of the lack of a new result and/or the lack of inventive ingenuity in arriving at the combination claimed.

Attention is further called to *In re Dann,* 8 U. S. P. Q. 367, 47 F. (2d) 356, where certain claims on appeal were allowed, the decision of the Court reading, in part, as follows:

> "By the combination thus described in the foregoing quotation, we think appellant has produced an article which is new and useful, differing in its character from that of any of the references, and that the particular elements recited in the quotation, when combined as described, perform functions which differ from the functions performed by them where found in the patents cited. The combination was not obvious to one skilled in the art and, in our opinion, involves invention. Certain of appellant's claims are, therefore, allowable. Decisions of this court applicable here are: *In re Champeau,* 17 C. C. P. A. (Patents) 568, 34 F. (2d) 1012; *In re Hamachek,* 17 C. C. P. A. (Patents) 633, 36 F. (2d) 119; *In re Baker,* 17 C. C. P. A. (Patents) 681, 36 F. (2d) 138."

Following this excerpt, the Court in *In re Dann* cited *Ex parte McCullum* with approval.

It is realized that each case must stand on its own and that no hard and fast rule can be laid down to cover all cases, but, as will presently be pointed out, the lack of similarity between the constructions of the reference patents and the different methods of needle selection and knitting employed by the several reference patents, that is, Lomax, Hirner and Bosworth, when coupled with the advantages gained by plaintiff, as disclosed in the Jones application, the instant case presents itself as one falling squarely within the spirit of the McCullum and Dann decisions.

LOMAX PATENT NO. 1,236,189.

The machine disclosed in the Lomax patent is more nearly like the construction disclosed by Jones (Plaintiff) than of either of the other reference patents relied on as anticipatory of the Jones invention. The needle cylinder, a fragment of which is illustrated at 1 in Fig. 1 of the Lomax drawings, page 162 of the record, is provided with slots within which needles 3 slide vertically to and from a yarn taking position, the hooks of the needles engaging the yarn when the needles are elevated to about the position illustrated in Fig. 1. The upward movement of the needles is ordinarily effected by cams 10 and 11, depending upon the direction of needle movement, being brought about in the actual Lomax construction by the supplemental cams 12 and 13 which act upon jacks or elements 4 that are positioned beneath companion needles, and in effect, from continuations of the needles although they are separate therefrom. After the needles in Lomax receive yarn in their hooks, the said needles are depressed by cams as 8 and 11 engaging the butts of the needles thereby lowering the needles to a so-called stitch drawing position where new loops are drawn through loops knitted during the previous course of knitting, that is, during a preceding rotation of the needle cylinder. At this point it is noted that the needle cylinder and needles rotate, whereas the cams illustrated in Fig. 2 are stationary, being mounted upon a fixed base. Although the cams in Lomax are stationary, the selective cams 13 do rave a selective up and down movement but they are still stationary in that they do not rotate with the needle cylinder.

The differences between the Lomax construction and the construction of the other references and the construction of Jones (plaintiff) will be developed later.

HIRNER PATENT NO. 1,026,206.

The complications of the Hirner machine may be avoided for the purposes of this discussion and restricted to consideration of Fig. VI of the Hirner drawings, page 130 of the record; Fig. IX of the Hirner patent, page 132 of the record; and Fig. XVII of the Hirner patent, page 137 of the record.

In Hirner the needle cylinder is stationary and the cam ring and cams rotate around the needle cylinder. Although this feature is a distinction from the construction in Lomax and Jones (plaintiff) where the needle cylinder rotates and the cams are stationary, plaintiff will not dwell upon this distinction for removing the Hirner construction from that of Lomax and Jones as to render untenable the combination of the Hirner and Lomax constructions as anticipatory of the claims before this Court. However, as will hereinafter be pointed out in more detail, there are other dissimilar features insofar as Hirner, on the one hand, and Lomax and Jones (plaintiff), on the other hand, are concerned, which will develop the fact that it would be difficult to combine the Lomax and Hirner constructions to anticipate the claims before this Court.

The rotations of the cams about the needle cylinder, with especial reference to Fig. VI of Hirner, causes the needles 38, 39 to be elevated. To effect a selective elevation, i. e., so that the selective needles shall rise to a higher level than other needles, see Fig. 17, page 137 of the record, jacks 233 are employed. These jacks are normally in a withdrawn radial position as illustrated at the left of Fig. VI, being advanced selectively as by cams 236 to 242, which cams are controlled in any suitable manner and in any desired sequence. Upon a jack 233 being advanced as by cam 242, the jack is moved to an inward radial position as illustrated at the right of Fig. VI, whereupon the projection 234 on the jack is engaged by a cam which tilts the jack, elevating the toe thereof to the position illustrated at the right of Fig. VI which causes its needle 39 to rise to the upper level indicated in Fig. XVII. Thus the jack movement of Hirner is twofold, first, a selective radial movement, and then a tilting upward movement, the movements being thus effected by a jack which is *not* within the slots of the needle cylinder and operates quite differently from the jacks 4 of Lomax, and the jacks of Jones (plaintiff).

The effect of the needles elevated by the jacks 233 of Hirner to a higher level than the non-selected jacks, is illustrated in Fig. IX, page 132, and Fig. XVII, page 137 of the record. As there illustrated, the selected, elevated needles are the only ones taking the yarn passing through the eyelet 50, all the needles engaging and knitting the yarn passing through the eyelet or yarn guide 52.

BOSWORTH PATENT NO. 1,433,172.

Whereas the machine of the Bosworth patent is broadly similar to plaintiff's (Jones') machine, and therefore similar to the machine disclosed in Lomax, the Bosworth machine is specifically constructed to operate in a manner radically different from that of either Lomax or Jones (plaintiff). Whereas the Jones machine and the Lomax machine are adapted for knitting hosiery, the intent and purpose of the Bosworth machine and method of knitting is to produce gloves as illustrated in Figs. 19 and 20 of the Bosworth drawings, page 156 of the record. The distinction as to product is not the sole distinction, that is, as between Bosworth on the one hand and Lomax and Jones on the other hand. In Lomax and in Jones (as will later appear) the needles are independently selected and during the knitting of the patterned fabric, the needle cylinder rotates continuously in one direction. During such rotations of the needle cylinder, the needles may be independently selected to effect the knitting of patterned fabric which fabric may be varied from course to course or as desired. In Bosworth we have an entirely different method of knitting and set-up of cams. In the first place, the jacks, Figs. 4, 5 and 6 of the Bosworth drawings, page 154 of the record, are merely prolongations of the needles and are fixed thereto. The fixed association of the jacks with their needles in Bosworth is essentially different from the arrangement shown in Lomax and Jones and as set forth in the claims before this court. Furthermore, the fixed arrangement of jacks and needles is *essential* to the knitting of the desired product in Bosworth as will be evident from testimony of the witness Southworth particularly in answer Q 31 and Q 32, pages 24 and 25 of the record.

DISSIMILARITY OF CONSTRUCTIONS AND METHODS OF OPERATION OF REFERENCE PATENTS HIRNER, LOMAX AND BOSWORTH.

Comparing Hirner and Lomax: the essential difference between Hirner and Lomax is in the method of needle selection or rather the construction and control of the jacks or elements that specifically and selectively elevate certain needles to the exclusion of others during the knitting of certain courses. Hirner employs radially selected jacks which project out far beyond the circumference of the needle cylinder and have imparted to them first, a selective radial movement, the selected jacks then being tilted as illustrated in Fig. VI of the Hirner drawings page 130 of the record. On the other hand, Lomax has jacks positioned beneath their companion needles and movable in right lines in the slots of the needle cylinder. The selection of the jacks of Lomax is in an axial or right-line direction, the selection following elevation of all of the jacks by the cams 12, Fig. 2, page 162 of the record. The totally different jack selection employed by Hirner and Lomax makes any combination of these two references, insofar as jack selection is concerned, impossible from a mechanical point of view. Any suggestion that either Hirner or Lomax might provide for a modification of the other (Hirner or Lomax) would be a mere suggestion and would teach nothing whatsoever mechanically; in other words, neither Hirner nor Lomax would teach the other *how* to modify "the other" from a mechanical viewpoint.

Comparing Lomax with Bosworth: the description beginning with line 70, page 2 of the Bosworth specification, page 158 of the record, illustrates the radical difference in the methods of operation employed by Bosworth and Lomax. As described in the mentioned portion of the Bosworth specification, the wrist portion of the glove or mitten is knitted by all the needles but by reciprocatory movements of the needle cylinder, whereas in Lomax the pattern portion of the fabric is knitted by continuous circular movements of the needle cylinder. A more important distinction resides in the method of selection in Bosworth as compared with that of Lomax. In Bosworth the cam 2 elevates the needles and attached jacks so that the knitting butts 1 of Bosworth are not in a position to be engaged by the knitting cams. Thereafter a cam, such as the cam 3, engages butts of a group of the needles restoring the needles to a position so that the needle butts can be engaged and actuated by the knitting cams to knit the thumb strip. During the knitting of the thumb the needle cylinder reciprocates and all of the needles knit in the same manner throughout the knitting of the thumb. In other words, there is no needle selection during the knitting of courses. In Lomax the selection is of individual needles and during the knitting of courses so that, for example one needle will knit a normal stitch and an adjacent needle will knit a pattern stitch. Again in Bosworth there is no fabric patterning whatsoever.

The jacks in Lomax are independent of their needles but this is not true of Bosworth, the so-called jacks, Fig. 4 of the Bosworth drawings, page 154 of the record, being fixed to and forming part of the companion needles and this construction is necessary in Bosworth otherwise the restoring cams, e. g., the came 3, would not restore the knitting butts to a position to be engaged by the knitting cams to effect normal knitting, see Southworth's testimony, Q. 32, page 25 of the record.

Comparing Hirner with Bosworth: the foregoing remarks with respect to Lomax, in comparison with Bosworth, apply also to Hirner in comparison with Bosworth. There is an additional distinction in Hirner over Bosworth, namely, in Bosworth the so-called jacks are prolongations of the needles and move longitudinally in the slots of the needle cylinder, whereas in Hirner the jacks are independent of their needles and move first in a selective radial direction, the moved jacks then being tilted or rocked to elevate their needles.

From the foregoing remarks it will be evident that the Bosworth construction is so totally different in construction and method of operation from either the constructions or operations of knitting of Lomax or Hirner that the combination of the Bosworth patent construction with that of either Hirner or Lomax would not suggest itself to a knitting mechanic. The appropriation of any idea that might be suggested by, say, Bosworth, would be of such a nature as to require the services of an inventor to adapt the suggestion to either Hirner or Lomax.

While the methods of knitting employed by Hirner and Lomax are substantially the same, although not identical, the machine constructions of Hirner and Lomax differ so radically that the *radial* jack selection of Hirner would not aid a knitting mechanic in modifying the jack construction and selection of Lomax.

JONES MACHINE CONSTRUCTION HAS MANY ADVANTAGES OVER PRIOR PATENTED CONSTRUCTIONS.

Plaintiff's machine construction and method of knitting as disclosed in the Jones application, are described by the witness Southworth on pages 21, 22 and 23 of the record.

The primary purpose served by the invention of plaintiff (Jones) is to cause selected ones only of the needles to be moved to a greater extent than others. Any special purpose (there are many) served by the greater elevation of selective needles is not of great importance, but, briefly, the more elevated needles may be the ones to knit a yarn during a course of knitting or said needles may engage an additional yarn, e.g., all the needles may knit one yarn and the selective needles only may knit another yarn during the knitting of a course which means during one revolution of the needle cylinder. By way of example, attention is particularly called to Fig. 29 (Exhibit 11) of the Jones (plaintiff) drawings on page 118 of the record. In that figure you are assumed to be viewing the movements from the inside of the needle cylinder, the needles moving from right to left, one yarn only being fed to the needles, some of which, e.g., two needles above the jacks indicated by the numeral 86, not being elevated sufficiently to engage and knit the yarn.

The cycle of operation is substantially as follows: a single cam 175 engages the lower butts (indicated at the bottom of the jacks 40) elevating the said butts to the dot and dash level between the cam 175 and the cam 33A. Thereafter the cam 33A engages the butts of the needles companion to the jacks, slightly depresses the needles and their jacks to level off the needles and jacks. Thereafter selective cams 22A-26A elevate selected ones of the needles to take the yarn from the feed shown at the upper portion of jack 29. At this point it is noted that cam 21A is a special cam and is not in operative position during the knitting of pattern fabric, see the description on page 185 of the record, lines 14 to 19.

LOMAX PATENT NO. 1,236,189.

Lomax appears to be the closest approach to plaintiff's machine, both with respect to the method of knitting employed and with respect to machine construction.

At this point attention is called to the testimony of the witness Southworth beginning on page 28 of the record. At that point in his testimony the witness read into the record part of the decision of the Board of Appeals of the Patent Office dated February, 1937, wherein the Board of Appeals indicated that the Lomax construction included "a plurality of jacks located in the same groove". In answer to the following question, the witness read into the record a corresponding statement made in the Examiner's statement preceding the decision by the Board of Appeals. I now call attention to the witness' answers on page 29 of the record and also to his answer to the first question on page 30 of the record in connection with Exhibit 14, page 121 of the record.

In this connection I also call attention to: the last answer of the witness, page 35 of the record; the answers of the witness appearing on page 36 of the record; and the first answer on page 37 of the record.

Reference to the answer of the witness in connection with excerpts from the decision of the Board of Appeals in the Examiner's Statement, all taken in connection with Exhibit 14, are submitted, not to show that the construction placed upon the Lomax jack set-up by the Board of Appeals and the Examiner are inconsistent with the Lomax specification, but to show that the jack set-up of Exhibit 14 is a more probable jack selection and in any event there is no disclosure in the Lomax specification that supports the plurality of jacks in each slot as advanced by the Board of Appeals as distinguished from the more probable jack set-up of Exhibit 14.

Distinguishing from Lomax, the cam 175 of Jones (plaintiff) engages the butts of *all* the jacks elevating them to a position to be thereafter further and selectively elevated by the cams 22A-26A. This division of the vertical movements of the jacks and needles between the single cam 175 and the selective cams 22A-26A is an important feature and clearly distinguishes over the corresponding needle and jack movements of Lomax. In the latter, the jacks are elevated by fixed cams 12 at each butt level, the jacks and needles then being selectively elevated by the selected jacks 13 to effect knitting. Obviously the provision of a fixed cam 12 at each level takes up space vertically and requires a longer needle or jack cylinder than is required when employing a single cam, such as 175, which is common to all of the selective cams 22A-26A. In other words, in the Jones (plaintiff) construction, about one-half of the elevating movement of each jack is taken up by the cam 175 common to all of the jacks which reduces the necessary height of the needle cylinder.

This gain permits the use of a greater number of selective cam levels (22A-26A) as illustrated in Exhibit 15, page 122 of the record. In this connection attention is particularly called to the testimony of the witness Southworth pertaining to Exhibit 15, the said testimony beginning on page 30 of the record and extending through page 32 of the record.

Thus by using the single cam, such as 175, plaintiff's (Jones) machine may employ a shorter needle and jack cylinder than would have to be employed by Lomax for the same number of selective cams or steps.

The gain or saving in the length of the needle cylinder is further illustrated in the accompanying drawings. (opposite)

Fig. 1 illustrates the vertical travel of the needles, the butt N being shown in its uppermost position at which point the needle would be at the extreme upward point of its movement, that is, at about the point indicated by the needle in Fig. 1 of the Lomax drawings. The butt position N′ illustrates the position of the butt at the lowermost point of its travel when the needle hook is drawing a new stitch. Thus the jack butt must move from the position J to that of J′; in other words, the vertical dimensions of each selecting level in Lomax must correspond to the vertical throw of the needle and jack butts plus the height of the jack butts. Thus if Lomax employs, say, five selective levels at each of which there is positioned cam 12 as well as cam 13, the needle cylinder must be of a height equalling in length five times the vertical throw of the needle and jack butts plus the height of the butts.

Fig. 1

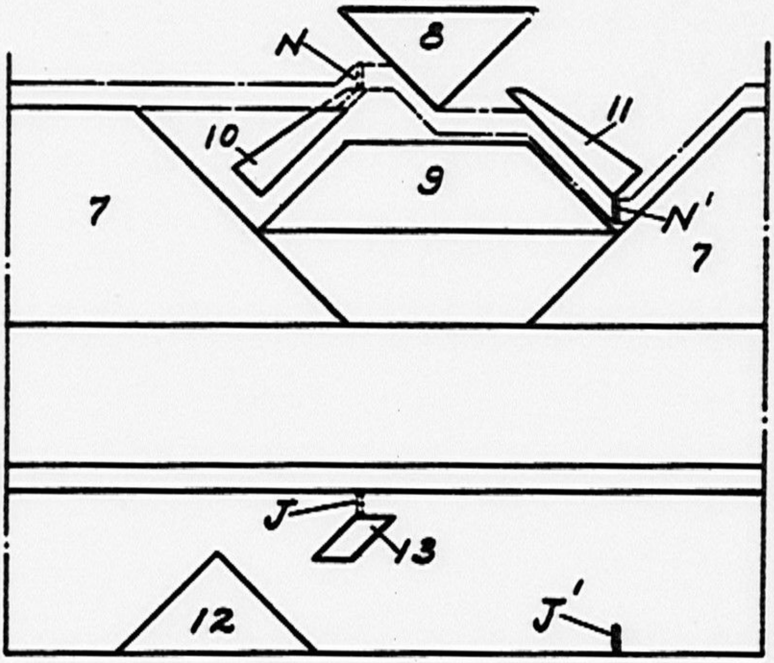


Fig. 2

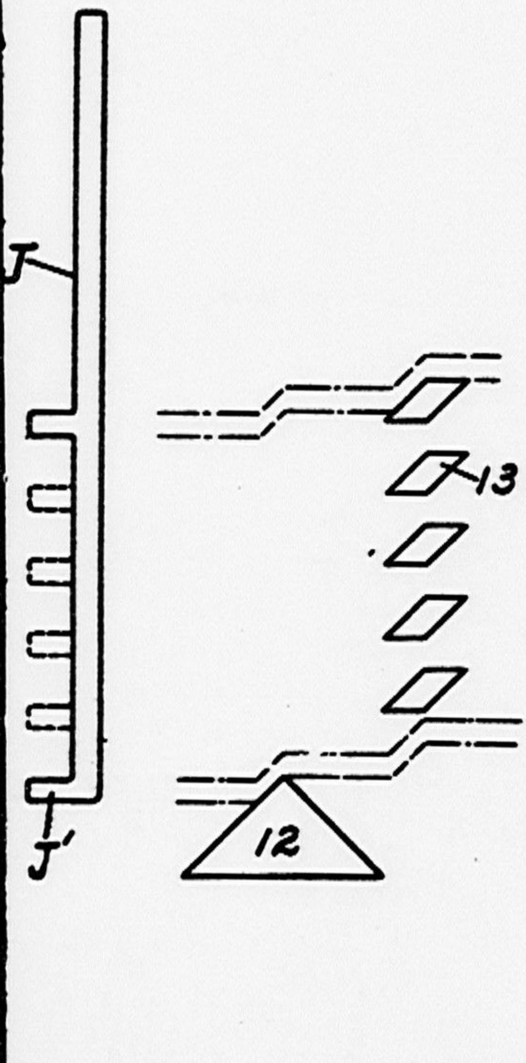
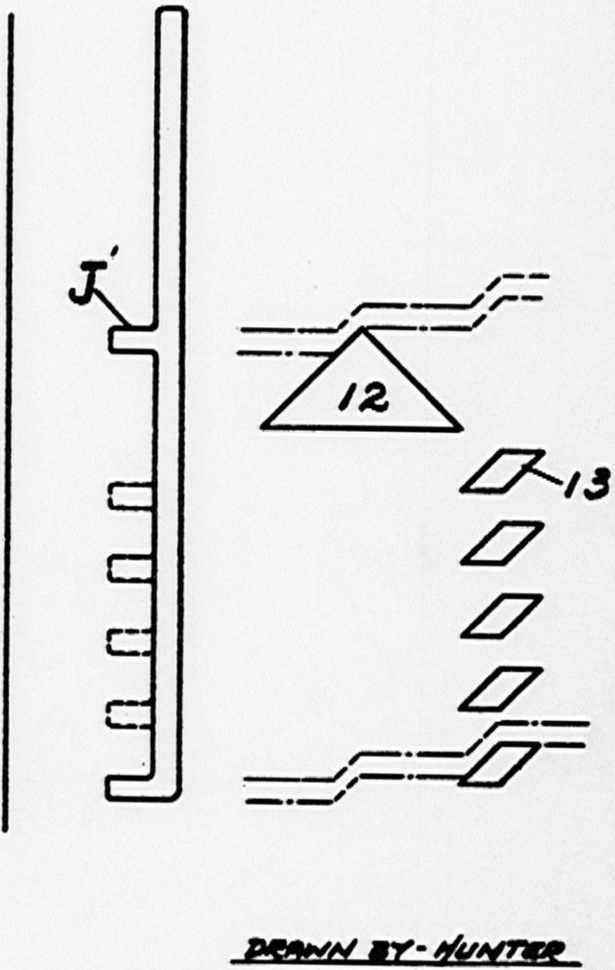


Fig. 3



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FEB. 7, 1940

In Fig. 2 is illustrated a construction which, for convenience, may be referred to as a modified Lomax construction in which a single cam 12 supplants the plurality of cams 12 employed by Lomax, the cams 13 remaining as in Lomax although they would have to be radially movable to adapt themselves to association with a single cam 12. Inspection of Fig. 2 will show that by providing a single cam 12 and a common jack butt J′ at the lower end of the jack, there will be a saving in the over-all height of the needle by elimination of all but one cam 12 of Lomax.

The same saving is effected, as illustrated in Fig. 3, by having the cam 12 above the selective cams 13, such a change being an obvious modification of that illustrated in Fig. 2.

At this point it is noted that the drawings of Lomax do not show the jack butts at their lowermost travel; as a matter of fact the cam 12 otherwise would serve no function. The jack butts are necessarily moved to a lower level than shown, being depressed by the needles as the latter move to a stitch drawing position, the cams 12 thereafter acting upon the jack butts to raise them to the tuck point as stated in the first full paragraph, page 2 of the Lomax specification.

The question naturally arises: why is a saving of the length of the needle cylinder of any great importance? The answer is that the over-all height of the needle cylinder is such that in hosiery knitting machines, usually operated by girls or young women, the operating parts, and especially the top of the needle cylinder, are about as high as they could be for the convenience of the operator. In this connection, attention is called to the fact that in the knitting of stockings, the rib tops thereof are ordinarily knitted on one machine, called a ribber, after which the tops are transferred or topped onto the needles of a machine (such as disclosed in the Jones application) by the operators inverting what is called a quill ring over the needles of the needle cylinder to effect the transfer of the previously knitted rib top to the needles of a machine, such as that disclosed by plaintiff. Obviously therefore a great increase in the height of the needle cylinder would make this topping operation much more difficult.

Furthermore, the jacks are relatively thin being of a thickness of about .025 of an inch. Obviously with such a thin jack construction, there is a limit to the possible lengths of the jacks. In this connection there is, of course, some play of the jacks in the slots of the needle cylinder as a consequence of which if the jacks were very long, a right-line movement imparted to them by cams, such as cams 12 of Lomax, would tend to cause the jacks to buckle or bend.

The advantages of plaintiff's machine over that of Bosworth are many, in fact the total dissimilarity of the construction and operation of the Bosworth machine compared with that of Jones leaves little in common. About all that can be said is that Bosworth discloses jack butts at different elevations and so does Jones, there the similarity ceases. As will be hereinafter pointed out, Bosworth is not an anticipation of any of the claims before this Court.

Hirner has jacks that are selectively advanced in a radial direction towards the needle cylinder and such selection is so totally unlike that of plaintiff's machine, as disclosed in the Jones application, that comparison again is difficult. For example, in plaintiff's machine the jacks have an axial or right-line movement only, that is, both for raising their companion needles a selective distance and for imparting the full throw to their needles. The radically movable and tiltable construction of Hirner is not adaptable to a present-day hosiery knitting machine, the radially movable jacks of Hirner projecting outwardly from the needle cylinder, thus taking up space that is at a premium in present-day hosiery knitting machines.

CLAIMS 38, 78, 86, 89, 100, 101, 105 AND 116 DISTINGUISHED OVER THE REFERENCES OF RECORD.

Claim 38.

This claim defines over Hirner by calling for "jacks for all the needles located in the needle grooves of the needle cylinder, and having only lengthwise sliding movement therein, in parallelism with the axis of the needle cylinder." In Hirner the jacks are first radially movable and are then tilted to elevate the needles.

Claim 38 defines over Lomax by calling for the jacks as having spaced butts to render them selected. Spaced butts on the jacks are not present in Lomax. At this point I again refer to the statement by the Board of Appeals and by the Examiner quoted from page 28 of the record with respect to the Lomax jack construction. In the first place, as hereinbefore pointed out, there is no disclosure in Lomax that supports the Board of Appeals in the alleged Lomax construction; in other words, the specification sheds little light on this point and we have no more right to assume the Lomax jack construction to be that imputed by the Board of Appeals than we have to assume the jack construction to be such as illustrated in plaintiff's Exhibit 14. On the contrary, the assumption by the Board of Appeals and by the Examiner in his statement that below each needle there are a plurality of jacks each of which has a butt, is an assumption that would preclude the possibility of any pattern effects unless we further assume that some of the alleged jacks under each needle have butts and others do not, for if all the alleged jacks under each needle have butts no pattern effects can be obtained, in other words, the withdrawal of a selected cam 13 at one level would not affect the knitting as a similar cam at another level would cause the needle in question to be elevated.

Attention is called to the limitation in Claim 38 reading "said jacks having spaced butts thereby rendering them selective". We thus have spaced and selective butts on the jacks, e.g., a lower butt of each jack for engagement as by the cam 175 for a preliminary raising, the jacks also having selective butts above the lower butts for engagement by the selective cams 22A-26A. In this connection lower butts are shown on *alternate* needles only in Lomax, the selective butts thereabove being on intermediate needles. This alternate arrangement will also be evident from inspection of the fabric of Fig 7 wherein the pattern effects are obtained in alternate wales only, the wales being vertical lines of stitches, Fig. 7, page 162. Inspection of Fig. 7 shows that the alternate, vertical lines of stitches are not patterned, being of the same character throughout. It is true that one jack, the intermediate jack of Lomax, Exhibit 14, apparently has two butts, but this extra butt is for a special purpose, apparently to effect the knitting of the tuck or white spot shown in the center of the diamond, Fig. 7. To effect the knitting of that spot, two cams 13, i.e., the second and the fifth, counting from the top, Fig. 2 of Lomax, are probably withdrawn. At this point it is noted that the specification of Lomax is of no help in this particular, but I am assuming, and this is an admission against interests, that Lomax has a jack corresponding to the intermediate jack of plaintiff's Exhibit 14 which jack has two butts. However, in the Jones (plaintiff) construction, *each* jack has two butts, that is, a lower butt for engagement as by the cam 175, and one or more upper selective butts for engagement by the cams 22A-26A.

Claim 38 distinguishes radically from Bosworth first in the method of knitting. In the Jones (plaintiff) method of knitting, the object is to obtain patterned fabric specifically by feeding two yarns to the needles in what is known as a plating relation, i.e., so that one yarn will appear on the outer face of the fabric at certain wales. On the other hand, in Bosworth there is no such thought in mind; Bosworth first knits a palm, then the fingers of a glove or mitten and during the knitting of the palm and fingers *all* the needles in action knit without selection, that is, they knit in the same manner from course to course.

Claim 78.

Claim 78 defines over Hirner by calling for jacks in the grooves of the needle cylinder and mounted for movements lengthwise thereof. Hirner has radially movable and then tiltable jacks which do not respond to this limitation.

Claim 78 distinguishes from Lomax in calling for a plural number of butts on the jacks.

The remarks with respect to Claim 38 apply to Claim 78 insofar as Bosworth is concerned, Claim 78 being directed to the knitting of patterned fabric.

Claim 86.

Permission is requested to withdraw Claim 86 from consideration.

Claim 89.

Claim 89 defines over Hirner by calling for a jack for each needle which is mounted in the needle cylinder slot and is movable lengthwise thereof.

Claim 89 defines over Lomax by calling for the jacks each having a plurality of butts. Furthermore, the radially movable cams called for are not present in Lomax and the radial movement of the cam is essential to plaintiff's construction and method of operation. In other words, if the vertically movable cams 13 of Lomax were employed in the Jones construction, many of the advantages of the use of the single cam, such as 175 would be lost. In this connection it is noted that Lomax can use vertically movable cams 13 because such cams when depressed do not elevate the jack butts above the top of the companion cam 12. Obviously if a single cam 175 were employed and the plurality of cams of Lomax eliminated, the vertically movable cams 13 of Lomax even in their lower position, would effect a movement of the jacks.

So far as Bosworth is concerned, Claim 89 defines thereover in many particulars in addition to the idea of a patterned fabric which is not present in Bosworth. Claim 89 calls for a movement of the jacks independently of the movements of the needles. In Bosworth, the jacks or prolongations of the needles are necessarily connected to the needles as the jacks are relied upon to move the needles down so that their butts (needle butts) shall be in position to engage the knitting cams.

Claim 100.

Claim 100 defines over Hirner in calling for the mounting of the jacks in the cylinder slots and the movement thereof lengthwise of the slots. Again, the radially disposed jacks of Hirner do not respond to this limitation in any degree.

Claim 100 defines over Lomax by calling for spaced butts on the jacks which range from a predetermined minimum to a predetermined maximum.

Claim 100 defines over Bosworth by calling for an independent movement of the jacks with respect to the needles which is inconsistent with the method of knitting employed by Bosworth. Furthermore, in Bosworth there is no intention of having all the jacks provided with a plurality of butts. The plural butt arrangement on some of the butts of Bosworth is dictated by the fact that certain of the needles are in knitting operation more than once during the knitting of a glove.

Claim 101.

Claim 101 defines over Hirner by calling for the mounting of the jacks in the cylinder slots and movement of the jacks lengthwise of the slots.

In Lomax Claim 101 calls for spaced butts on the jacks which range from a predetermined minimum to a predetermined maximum.

Bosworth is distinguished from in several particulars, e.g., Bosworth does not have a plurality of butts along the jacks, and furthermore, the concluding limitation, namely, "means to render the pattern means ineffective during reciprocatory knitting'', is not in Bosworth. Bosworth is concerned entirely with reciprocatory knitting. Furthermore, the pattern means, as defined in the last three lines of the claim, connotes the knitting of patterned fabric which is not present in Bosworth.

Claim 105.

Claim 105 distinguishes over Hirner by calling for a lengthwise movement of the jacks in the needle grooves below the needles.

Claim 105 calls for the members having butts on a plurality of planes, meaning that each member is provided with a plurality of butts. When so understood this claim distinguishes from Lomax. Admittedly unless the claim is construed as calling for a plurality of butts on each jack, it is anticipated by Lomax.

Claim 105 distinguishes from Bosworth in many particulars: in Bosworth the jacks are not independent of their needles and the limitation ''whether or not the corresponding needle shall be elevated to receive a yarn'' calls for pattern means entirely foreign from Bosworth.

Claim 116.

The limitation in the last five lines of the claim, page 197 of the record, is not anticipated by Hirner.

The ''cam for moving some of the instrumentalities'', etc., is not fairly anticipated by the plurality of cams 12 of Lomax for the reasons hereinbefore pointed out, the use of a single cam effecting the saving in the vertical dimensions of the needle cylinder.

The mentioned cam is also entirely absent from Bosworth.

I will admit that Claim 116 does not define the invention with respect to the single cam 175 with such clarity as it should have. With that thought in mind the following claim, slightly amended, numbered 121, was informally presented for consideration by the Patent Office. The Patent Office informally held that the claim could not become part of the record.

I now quote this claim:

> "A knitting machine having a needle bed, independent needles and jacks, means for selecting some of the jacks to vary the character of the knitting, said means including a plurality of movable, selective cams in combination with a single cam, the selective cams moving their jacks lengthwise of the needle bed and the single cam moving all the jacks lengthwise only of the needle bed, both jack movements being in the direction of movement of the needles to yarn taking position, the lengthwise movements imparted to the jacks by the seletcive cams and by the single cam effecting the knitting of a great number of fabric patterns with a comparatively short needle bed, and means for selectively acting upon the said selective cams to effect movement thereof to a position to act upon the jacks in the manner aforesaid."

This claim very definitely defines the invention and distinguishes over Hirner by calling for a movement of the jacks lengthwise only of the needle bed which distinguishes over the radially movable and tiltable jacks of Hirner.

Lomax lacks the single cam, the plurality of cams 12 necessarily calling for a longer needle cylinder, that is, for the same number of selections.

Bosworth adds no element comparable to the single cam and his method of knitting is entirely foreign to the function of the single cam.

CONCLUSION.

In view of the foregoing remarks and the radically different constructions and methods of knitting employed by the reference patents to Hirner, Lomax and Bosworth, it is urged that plaintiff is entitled to the allowance of the claims before this court.

Respectfully,

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